

## SUMMARY MTL-392-H

TOY NAME

PHONE MODEM

**INTRO SEASON**

**TOY YEAR**

TAX NUMBER

f/

TOY DESCRIPTION					
<b>GENERAL DATA</b>	DATE	8/20/80	8/20/80	8/20/80	
	STATUS	FEAS	FEAS	FEAS	
	SOURCE	US-VEWDRN	US-VEWDRN	US-VEWDRN	
	'A' PRICE	100. <sup>00</sup>	140.51	93.86	
	QUOTA	SM	SM	30M	
	SALES @ QUOTA	500.0	702.6	2815.8	
<b>VARIABLE COSTS</b>	SALES VAR. %/\$	12.0 / 12.000	12.0 / 16.861	12.0 / 11.263	/
	ROYALTY %/\$	-/-	-/-	-/-	/
	RETURNS %/\$	5.0 / 5.550	5.0 / 7.798	5.0 / 5.209	/
	MFG. VAR. COSTS	46.817	46.817	46.817	
	FRT. & SHIPPING	.055	.055	.055	
	TOTAL VAR. COST	64.422	71.532	63.344	
<b>PRODUCT CONTRI-BUTION</b>	PROD CONTR. %	35.6	49.1	32.5	
	PROD CONTR. \$	35.578	68.978	30.516	
	CONTR. @ QUOTA	177.9	344.9	915.5	
<b>MARKETING CONTRI-BUTION</b>	MFG. FIXED COSTS	-/-	-/-	-/-	/
	MKTG CONTR. %	35.6	49.1	32.5	
	CONTR. @ QUOTA	177.9	344.9	915.5	
<b>DIRECT FIXED COSTS</b>	R&D PROJECT COST	50.0	50.0	50.0	
	R&D NON-REPORTING	--	--	--	
	FREE ASSIST	--	--	--	
	TOOLING	105.2	105.2	105.2	
	NEW PROD. DEVP. COST	--	--	--	
	ADVERTISING	--	--	--	
	TOTAL FIXED	155.2	155.2	155.2	
<b>NET CONTRI-BUTION</b>	NET CONTR. \$	W/ADV 22.7	W/O ADV 189.7	W/ADV 760.3	W/O ADV
	NET CONTR. %	W/ADV 4.5	W/O ADV 27.0 <sup>(T)</sup>	W/ADV 27.0 <sup>(D)</sup>	W/O ADV
COST SHT. DISTRIBUTION					
MATH CHECK BY/DATE					
PREPARED BY/DATE	J.Holt/S/p/r J.Holt/S/p/r J.Holt/S/p/r				
APPROVED BY/DATE					



## MANUFACTURING SUMMARY MTL-434-L

TOY NAME		TOY NUMBER		PREPARED BY:			DATE
PHONE MODERN				TIM R NESBIT			8/20/82
DOMESTIC COMPONENTS		MFG. SOURCE	MAT'L \$ EA.	LABOR \$ EA.	TOTAL \$ EA.	G & A/ PROFIT	
INJECT MOLD		HEH	1.168				
ELECTRONICS			21.464				
5% CONT ON 9.400			.470				
10% CONT ON 25.348			2.535				
LABOR			—	11.368			
PACKAGE			.457				
SUBTOTAL			26.094				
VENDORS SCRAP @ 3%			.783				
VENDORS MAT'L HANDLING 10% (26.577)			2.688				
SUBTOTAL			29.565				
VENDORS GSA @ 9%			2.661				
SUBTOTAL			32.226				
VENDORS PROFIT @ 10%			3.223				
TOTAL			35.449				
PACKAGE							

LANDED COST ORIENT COMPONENTS		SUB-TOTAL (PRIME COST)	
		35.449	11.368
		46.817	

SCRAP & NON STANDARD COST		%	

VAR. OVERHEAD	BASE	STD. HRS.	AMOUNT	FACTOR	\$ EACH
	DOM PRIMARY HOURS				
	DOM ASSY. HOURS				
	DOM CUBE				
	NO. OF PARTS				

LINE TOOLING	M +	M - UNITS

PRIMARY LINE TOOLING	HRS X

MFG. COMPLEXITY	PTS X \$	M/PT ÷	M-UNITS

VALUE ADDED/SOURCE OVERHEAD	% X

MANUFACTURING PROFIT 3.1% OF (A+B+C+D)

TOTAL MFG. COST (= MFG. VARIABLE + MFG. FIXED)
46.817

FREIGHT & SHIPPING	CU. FT. X	CTN/TOYS X

TOTAL HARD COST
46.872

	+	-

	+	-

ECONOMICS	%

TOOLING SUMMARY	COMMENTS	ITEM NO.	\$ M	TOTAL HARD TOOLING	
		10	65.2		
	TEST		34.0		
GAGES & FIXTURES	90				
			PRINT (ITEM 60)		6.0
			CAPITAL	PRODUCT WT.	TOTAL TOOLING
					105.2



# COMPONENT COST WORKSHEET-LABOR

MTL-911-D

PAGE \_\_\_\_ OF \_\_\_\_

TOY NAME <b>PHONE MODEM</b>	R&D NO -
PREPARED BY <b>Tim R NESBIT</b>	TOY NO -
DATE <b>8/20/80</b>	

COMPONENT DESCR →		ASS'Y				PACK OUT							
DEPT. OR C C	EFF.	STD. HRS.	ACT. HRS.	RATE	\$/M	STD. HRS.	ACT. HRS.	RATE	\$/M	STD. HRS.	ACT. HRS.	RATE	\$/M
	.85	412.8	442.7	22.00	10840								
	.85					18.0	240	22.00	528				
TOTAL LABOR					10840				528				

## LABOR DETAIL

OPERATION DESCRIPTION	STD HRS/M
<u>PCB SUB ASS'Y</u>	
INSERT 140 COMP @ 2.0 HRS/MEA	280.0
WAVE SOLDER	8.0
INSPECT 10%	28.8
TEST 10%	28.8
REWORK 10%	28.8
TEST	374.4
<u>GENERAL ASS'Y</u>	
TOTAL	44.4

## LABOR DETAIL

OPERATION DESCRIPTION	STD HRS/M
<u>PACK OUT</u>	
TOTAL	18.0



# RAW GOODS (INVENTORY) LISTING

REC	P/N	REV	DESCRIPTION	QTY	U/M	COST	STD. HRS	TOTAL COST
1	1		IC 74LS00	0	EA	\$ .200	.0000	\$ .000
2	2		IC 74LS85	0	EA	\$ .360	.0000	\$ .000
3	3		IC 74LS138	0	EA	\$ .350	.0000	\$ .000
4	4		IC CD4059AE DIV BY N COUNT	1	EA	\$2.000	.0000	\$2.000
5	5		OPEN	1	EA	\$ .000	.0000	\$ .000
6	6		IC MC6821	0	EA	\$2.000	.0000	\$ .000
7	7		IC MC6850P AC1A	0	EA	\$2.000	.0000	\$ .000
8	8		ROM 2316, 2K X 8	0	EA	\$2.500	.0000	\$ .000
9	9		IC PROM 74S288, 32 X 8	0	EA	\$1.050	.0000	\$ .000
10	10		IC XR2206CP TONE GENERATOR	1	EA	\$2.250	.0000	\$2.250
11	11		IC XR2211CP DEMODULATOR	1	EA	\$2.600	.0000	\$2.600
12	12		IC MC4741CP QUAD OP AMP	1	EA	\$ .500	.0000	\$ .500
13	13		RESISTORS, 1/4W 5%	30	EA	\$ .008	.0000	\$ .240
14	14		RESISTORS, 1/4W 1%	15	EA	\$ .012	.0000	\$ .180
15	15		CAP .01MFD 25VDC +-5%	6	EA	\$ .100	.0000	\$ .600
16	16		CAP .01MFD 25VDC CER DISC	10	EA	\$ .030	.0000	\$ .300
17	17		CAP .01MFD 25VDC ELECTRO	5	EA	\$ .050	.0000	\$ .250
18	18		TRIM POTS 5K LINEAR +-20%	5	EA	\$ .350	.0000	\$1.750
19	19		CABLE HARNESS, MODEM-KEYBD	0	EA	\$1.000	.0000	\$1.000
20	20		AUDIO CONN + CABLE	0	EA	\$ .500	.0000	\$ .000
21	21		TELEPHONE CORD + CONN	0	EA	\$ .250	.0000	\$ .000
22	22		PCB 3X7 NO GOLD	1	EA	\$2.520	.0000	\$2.520
23	23		EDGE CONN	1	EA	\$ .860	.0000	\$ .860
24	24		ROCKER SWITCH 4PDT LAMP	1	EA	\$ .350	.0000	\$ .350
25	25		RELAY DPDT 1 AMP	1	EA	\$1.000	.0000	\$1.000
26	26		AUDIO TRANSFORMER 3 WINDING	1	EA	\$1.600	.0000	\$1.600
27	27		QUAD SWITCH CD4066BC	0	EA	\$ .800	.0000	\$ .000
28	28		QUAD OP AMP 741 TYPE	1	EA	\$ .650	.0000	\$ .650
29	29		DUAL OP AMP 741 TYPE	1	EA	\$ .600	.0000	\$ .600
30	30		ZENER DIODE	1	EA	\$ .500	.0000	\$ .500
31	31		SIG DIODE, 1N914 OR 1N4148	5	EA	\$ .050	.0000	\$ .250
32	32		RESISTORS 1/4W 5%	40	EA	\$ .008	.0000	\$ .320
33	33		RESISTORS 1/2W 5%	4	EA	\$ .015	.0000	\$ .060
34	34		CAP CER DISC 50V	5	EA	\$ .030	.0000	\$ .150
35	35		CAP ELECT 2.2MFD 100V	2	EA	\$ .035	.0000	\$ .070
36	36		CAP .01MFD 1400V	1	EA	\$ .060	.0000	\$ .060
37	37		TRANSISTOR NPN 2N2222	1	EA	\$ .050	.0000	\$ .050
38	38		INSTRUCTION BOOK	1	EA	\$ .090	.0000	\$ .090
39	39		INLAY ALUMINUM LABEL	1	EA	\$ .100	.0000	\$ .100
40	40		KRATON FEET	4	EA	\$ .008	.0000	\$ .032
41	41		SCREWS	8	EA	\$ .004	.0000	\$ .032
42	42		MISC PARTS	1	EA	\$ .500	.0000	\$ .500
43	43		UPPER HSG ABS	1	EA	\$ .584	.0000	\$ .584
44	44		LOWER HSG ABS	1	EA	\$ .584	.0000	\$ .584
45	45		MASTER CTN	1	EA	\$ .077	.0000	\$ .077
46	46		INDIV CTN	1	EA	\$ .180	.0000	\$ .180
47	47		LABEL 11.5 X 15.5	1	EA	\$ .100	.0000	\$ .100
48	48		BUBBLE PACK	1	EA	\$ .050	.0000	\$ .050
49	49		CUNTINGENCY--PACKAGE	1	EA	\$ .050	.0000	\$ .050
50	50		5% CONT ON CHIPS	1	EA	\$ .729	.0000	\$ .729
51	51		10% CONT ON MAT L	1	EA	\$2.899	.0000	\$2.899
52	52		LABOR	1	EA	\$11.940	.0000	\$11.940
53	53		VENDOR SCRAP AT 3%	1	EA	\$1.465	.0000	\$1.465
54	54		VENDOR MAT L HANDL	1	EA	\$5.028	.0000	\$5.028
55	55		VENDOR G & A	1	EA	\$4.978	.0000	\$4.978
56	56		VENDOR PROFIT AT 10%	1	EA	\$6.029	.0000	\$6.029
57	57		FRT & SHIPPING	1	EA	\$ .055	.0000	\$ .055

56,212  
34,748  
FURTHER 21,464

TOTAL \$56,212



# Competitive Product Modems

6/17/83  
Scott Klynas

General Information	Atari Model 830	Radio Shack Interface II	Novations D-CAT	Universal Data Systems UDS 103 LP	Apple - D.C. Hays Micromodem II
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1. Type:	Acoustic	Acoustic	Direct	Direct	Direct
2. Controls:	a) Full/Half/Test (Duplex) b) Originate/Answer c) On/Off	a) Full/Half/Test (Duplex) b) Originate/Answer c) On/Off	a) Data/Talk b) Monitor In/Out	a) Data/Talk	None
3. Indicators:	a) Power b) Ready	a) Power b) Ready	a) Power b) Ready	a) Data On	None
4. Size:	10.2" x 4.7" x 2.3"	10.2" x 4.7" x 2.3"	10" x 4.7" x 1.2"	---	5.5" x 3.25" x 1.375"
5. Weight:	1.5 lbs	1.5 lbs	---	---	---
6. List Price:	to be announced	\$199.00	\$199.00	\$195.00	\$199.95
Interface Module:	---	\$ 99.00	---	---	\$190.00
Expansion Module:	to be announced	\$299.00	---	---	---



# Competitive Product Modems

6/17/80  
Scott Kiynas

Electrical Information	Atari Model 830	Radio Shack Interface II	Novations D-CAT	Universal Data Systems UDS 103 LP	Apple - D.C. Hays Micromodem II
1. Type:	Acoustic	Acoustic	Direct	Direct	Direct
2. Data Rate:	up to 300 Baud	up to 300 Baud	110 - 300 Baud	0 - 300 Baud	110 or 300 Baud
3. Compatibility:	Bell 103/113 series	Bell 103/113 series	Bell 100 series	Bell 103 series	Bell 103
4. Connector:	RS232C	RS232C	RS232C	RS232 and TTY	Special interface to Apple
5. Receive Sensitivity:	-45 dbm	-45 dbm	-45 dbm	-46 dbm	-50 dbm
6. Duplex:	Half/Full	Half/Full	Half/Full	Full	?
7. Originate/ Receive:	Both	Both	Both	Originate only	Both
8. Auto Answer:	No	No	No	No	Yes
9. Auto Call:	No	No	No	No	Yes
10. Power Supply:	24VAC/150mA Uses external transformer	24VAC/150mA Uses external transformer	117VAC/15W Uses external transformer	Uses phone line	Uses power supply from Apple



7/29/80  
Scott Klynas

### Modems

A modem is a device that allows a computer to communicate over the telephone lines. This gives the home computer access to thousands of prewritten programs and general information by telephoning a time-share service.

### Types of Time-Share Services to be Available

A) General Data Processing:

Share the capabilities of a much larger computer.  
Share special mathematical, business, or engineering programs.  
Share entertainment programs (i.e. games).

B) Electronic Newspaper:

Use the home computer to display the latest news reports.

C) Banking Services:

From your home computer, you can make transactions with your checking and savings account.

D) Electronic Mail:

Send or receive messages or pictures.

E) Department Store Services:

Use the home computer to see sales merchandise and place purchase orders.

F) Entertainment:

Games, etc.

G) Public Library:

As time goes on, printed material will become available to the public.

H) Stock Market Reports:

Available as they happen.

I) Weather Report

J) Farm Report



7/29/80  
Scott Klynas

Modem - Special Features

A) Auto Dial:

Use the home computer to store telephone numbers and dial the telephone. If the number is busy, the computer can be told to redial.

B) Auto Answer:

Use the Intellivision as an automatic telephone answering service. Messages could be stored on tape.

C) Security PROM:

This device would contain a built-in password for making transactions with a bank.

D) Direct Coupled to the Telephone:

This method is better than the standard "acoustic coupler" used in competitors products. Data can be transmitted with a lower error rate.

E) Directly Attached to the Keyboard Component:

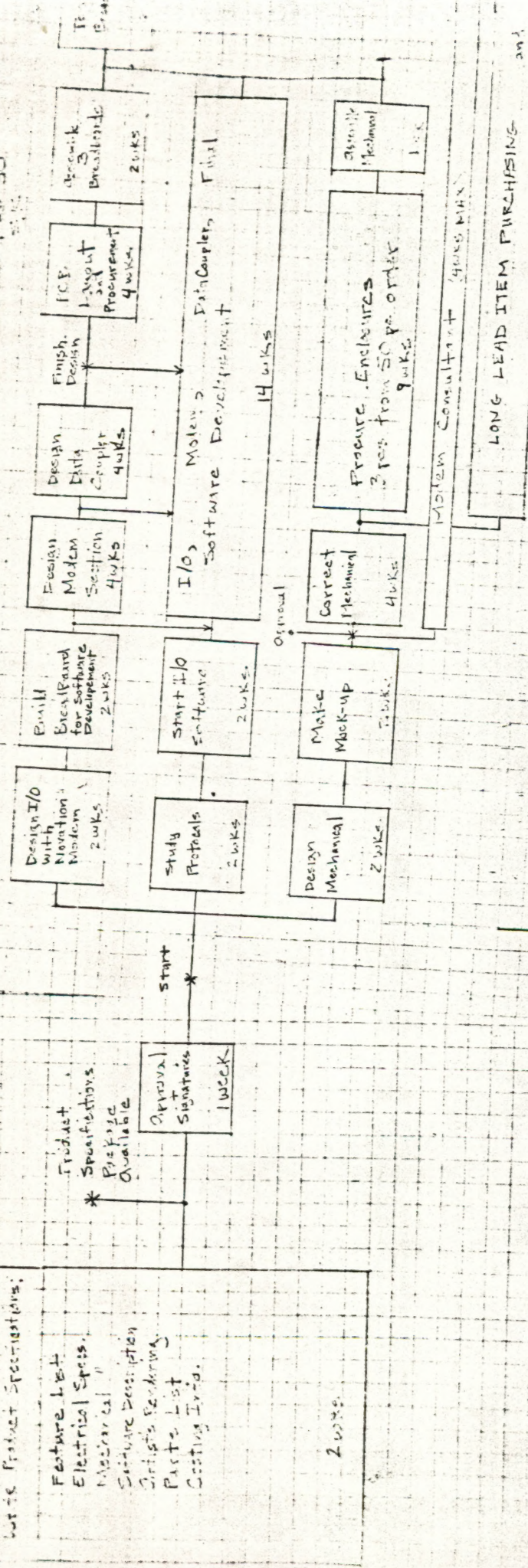
Most commercially available modems will not directly attach to the home computer. These types require the purchase of an interface module (up to \$200.00).

The Intellivision modem will plug directly into the keyboard.

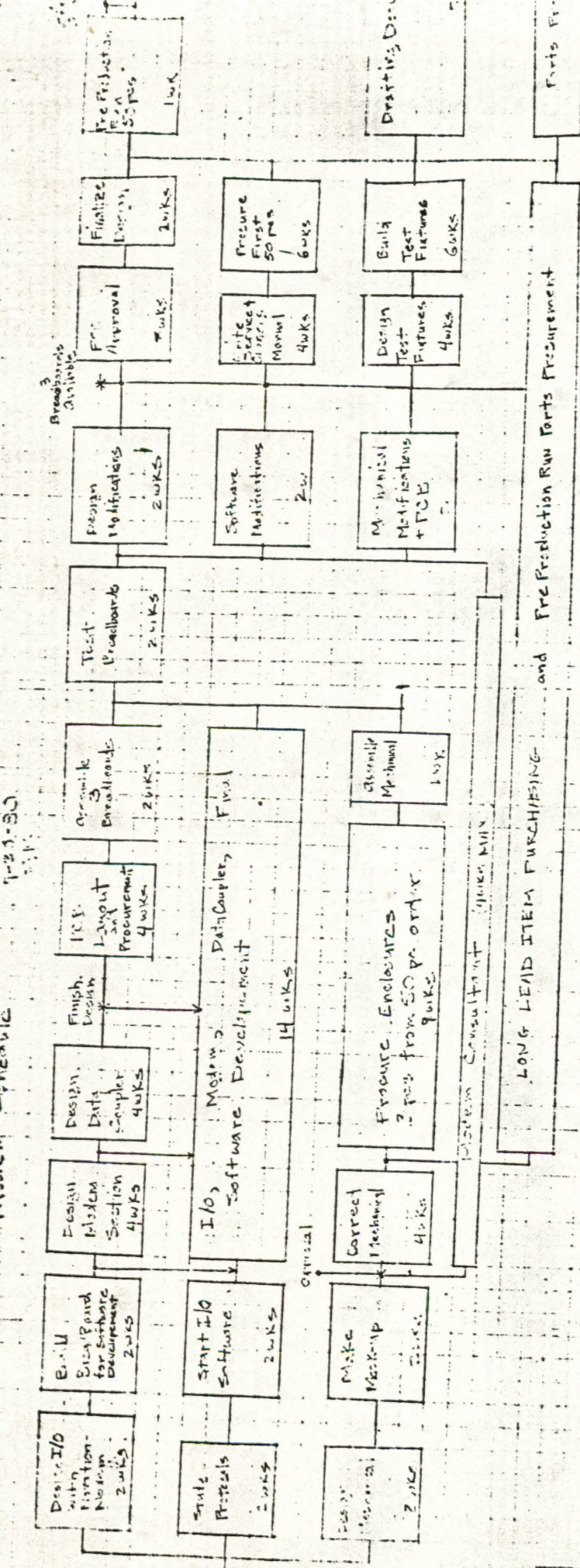


# Modem Schedule

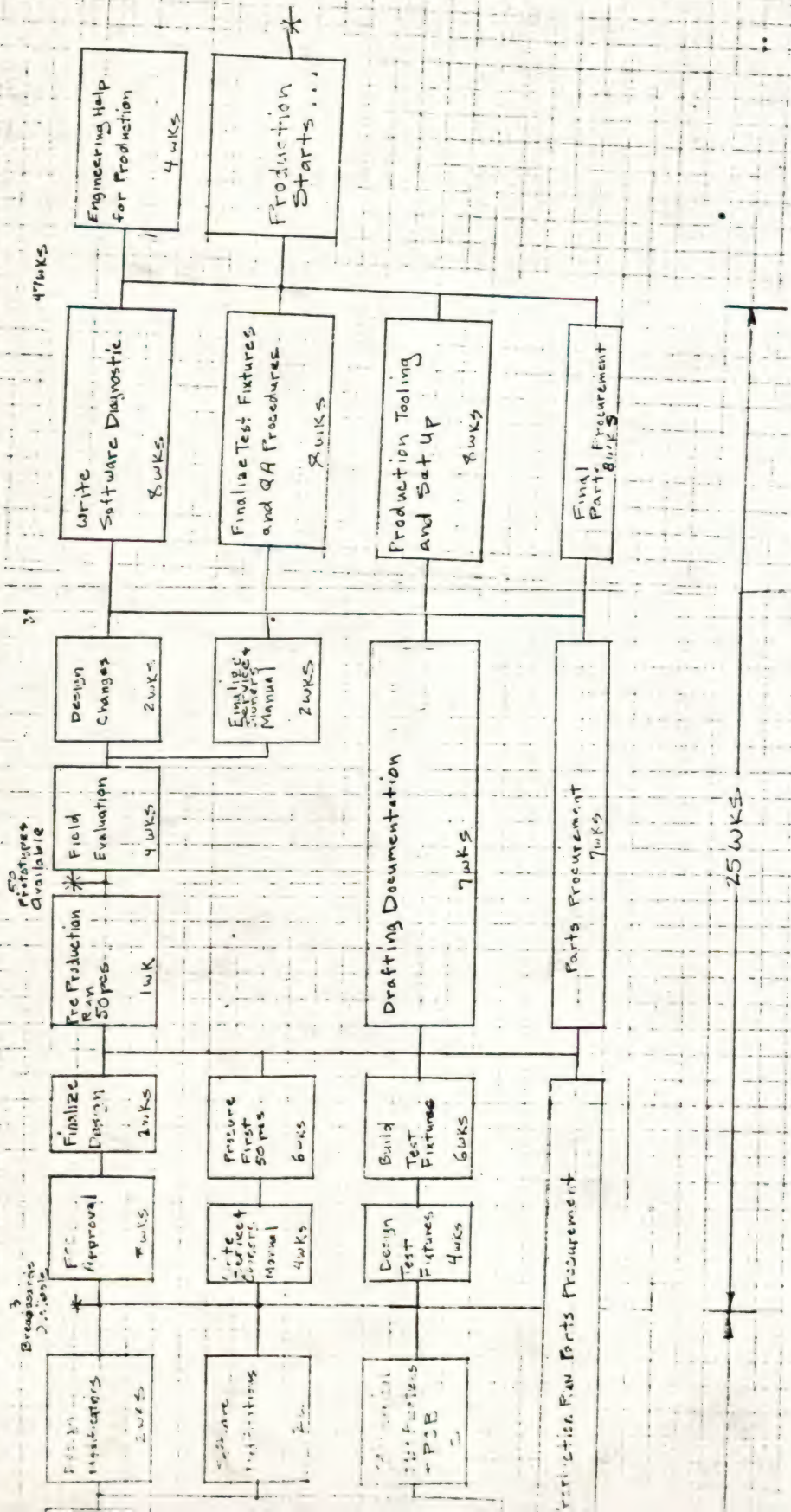
7-33-80













1. NOVATION

18664 Oxnard Street  
Tarzana, CA 91356  
(213) 996-5060

Contact: Agi Nagy (Vice President, Administrations)

Comments: This company makes modems for Atari, Radio Shack, and Apple. They also market modems under their own name. In 10K quantity their product would be roughly \$75.00 to \$100.00.

2. UNIVERSAL DATA SYSTEMS

5000 Bradford Drive  
Huntsville, AL 35804  
(205) 837-8100  
(714) 972-4619

Contact: A. Rich Woolard (District Sales Engineer)

Comments: While they market modems under their own name, they claim 60% of their business is private label. In 10K quantity their product would be approximately \$90.00 to \$110.00.

3. PRENTICE CORPORATION

266 Caspian Drive  
Sunnyvale, CA 94086  
(408) 734-9810

Contact: Perry Lindburg (Vice President, Marketing)

Comments: They have private label also.

Other Potential Private Label Sources (not contacted):

4. RACAL-MILGO, INC.

8600 N.W. 41st Street  
Miami, FL 33166  
(305) 592-8600

5. GENERAL DATACOM INDUSTRIES

One Kennedy Avenue  
Danburg, CT 06810  
(203) 797-0711



1. Question: Do you make IC Modems?
2. Question: Do you make Modem Filters?

<u>Question One</u>	<u>Question Two</u>	<u>Company</u>	<u>Comments</u>
No	No	National Semiconductors	
No	No	Fairchild	
No	No	Signetics	
No	No	Texas Instruments	
-	-	Intel	No Response
No	Yes	Reticon	They make CCD filters.
Yes	No	EXAR	They make modulator/demodulators
No	Yes	CTS	
Yes	Yes	Motorola	They are developing a CCD filter.
Yes	-	Rockwell	They only make 2400 baud modems.
No	Yes	Sprague	They make laser trimmed filters
Yes	Yes	Advanced Micro Devices	They are making a 1 chip modem that <u>includes</u> all digital filtering. Available in 1982.



8-20-80

S.K.

## Modem Size Estimate

Data Coupler	24.6 sq"
Modem Section	22.1 sq"
Address Decoder	5 sq"
Interface (Counter, PIA, ACIA...)	10 sq"
ROMs	4 sq"
Chassis space	10 sq"
<hr/>	
Total	75.7 sq"



7-24-80

S.Klynas

# Modem System Layout

